

**SYSTEM AND METHOD FOR DETECTING
GENERALIZED SPACE-TIME CLUSTERS**

ABSTRACT OF THE DISCLOSURE

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A system for detecting clusters in space and time using input data on occurrences of a phenomenon and characteristics at a plurality of locations and times comprises an expectation generation module determining expected occurrences of a phenomena, and an occurrence modeling module determining actual occurrences of the phenomena. The system further comprises a search module searching the expected occurrences and the actual occurrences for a plurality of candidate solutions, wherein each solution is represented as a set of points in the three-dimensional space, and wherein each point corresponds to a location at a time. The system comprises a convex container module determining at least one solution corresponding to a selected convex container shape from the plurality of candidate solutions, and a solution evaluation module determining a strength metric for each solution determined by the convex container module, the search module selecting a dominant cluster in the input data.

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